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08/962,362	10/31/97	KAMBE	N N-19.12-0006

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MMC1/0425

EXAMINER

DAY, M

ART UNIT

PAPER NUMBER

2879

DATE MAILED:

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/962,362

Applicant(s)

N. Kambe, et al.

Examiner

M. Day

Group Art Unit

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☒ Responsive to communication(s) filed on Mar 24, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-6 and 20-30 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-6 and 20-30 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

1. The response, filed 24 March 2000, has been entered.

Specification

2. The disclosure is objected to because of the following informalities: Referring to page 14, line 14, and page 16, line 15, the reference to the cited patent applications should be up-dated to provide the current status, i.e., now U.S. patent No. 5,958,348, and U.S. patent No. 5,989,514, respectively.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 1, 4, 5, 6, 20-25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskie. Referring to claims 1, 4, and 5, Jaskie discloses a display (see FIG. 5) comprising phosphor particles (fluorescent layer 53) having an average diameter less than 100 nm (see abstract, 10 nm particles) wherein the particle size is selected to yield light in a desirable portion of the spectrum. Jaskie is silent as to the particular range of phosphor particles. Jaskie teaches, however, that the specification of a desired particle range is within the skill of the art. See col. 7, lines 34-40. It would have been obvious to specify a desired particle range because the specification of a desired particle range is generally recognized to be within the skill of the art.

Still referring to claims 1, 4, and 5, substituting an average diameter of 5 nm as recited in claim 4, into the narrower range of particle sizes as recited in claim 5, yields a range of particle sizes of from 3 to 7 nm. Now referring to column 6, lines 46-49, Jaskie teaches that yellow light is produced from particles having a size of approximately 5 nm. Jaskie further teaches that the energy of a photon is inversely proportional to wavelength (col. 1, line 52-55), and inversely proportional to the size of the phosphor particle (col. 4, line 40-44). Taking yellow light to be the band from 597 to 577 nm and using the equations provided in column 1, line 52-55, and column 4, line 40-44 yields the yellow phosphor having the size from 5.04 to 4.95 nm, i.e., approximately 5 nm, as disclosed by Jaskie. Similarly, substituting the wavelength range of visible light from 400 to 800 nm, yield a particle distribution of from 4.14 to 5.84 nm, which is within the claimed range from 3 to 7 nm. Consequently, it is the position of the examiner that it would have been obvious to one skilled in the art that the presently claimed range of sizes reads on the teachings of Jaskie.

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Referring to claim 6, see col. 8, lines 19-28, FED.

Referring to claims 20, and 21, FED displays conventionally include a plurality of phosphors for generating red, blue, green light (see for example Clerc, FIG. 6, RGB phosphors 28), and anodes 28.

Referring to claims 22, 23, see col. 1, line 26; FIG. 5, faceplate 52.

Claim 24, and 27 are rejected for the same reason as claim 21.

Referring to claim 25, see FIG. 4, focus grid 59.

Claim 28 is rejected for the same reason as claims 20, 21.

Referring to claim 29, see FIG. 2, and col. 6, line 48.

Claim 30 is rejected for the same reason as claim 6.

5. Claims 2, 3, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskie in view of Bhargava. Referring to claims 2, and 3, the selection of known materials for a known purpose is generally considered to be within the skill of the art. Bhargava teaches that ZnO (group II-VI, semiconductor), ZnS, and Y_2O_3 (see col. 2, lines 4-32), are all suitable for quantum contained phosphors, such as desired by Jaskie. It would have been obvious to select ZnO, ZnS, and Y_2O_3 , phosphors as disclosed by Bhargava, in the display, as disclosed by Jaskie, because the selection of known materials for a known purpose is within the skill of the art.

Referring to claim 26, Jaskie does not disclose an EL display. Bhargava teaches that quantum confined phosphors provide EL displays (see FIG. 15) with higher efficiency (see col. 9,

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lines 46-67). It would have been obvious to include the quantum confined phosphors, as disclosed by Jaskie, in the EL display, as disclosed by Bhargava, for higher efficiency.

Response to Arguments

6. Applicant's arguments, filed 24 March 2000, have been fully considered but they are not persuasive.

7. The declaration under 37 CFR 1.132 filed 24 March 2000 is insufficient to overcome the rejection of claims 1-6, and 20-30 based upon 35 USC 103(a) as set forth in the last Office action because the declaration fails to set forth facts, and is self-contradicting.

Referring to page 2, paragraph 7, of the subject declaration, Dr. Rajiv Singh states: "In my opinion, the wet filtration approaches described in the Jaskie patent...are highly speculative, and...does not provide a reasonable expectation of successfully separating a collection of nanoparticles to isolate a particle population with a desired narrow range of particle sizes." The examiner respectfully disagrees. To be of probative value, any objective evidence should be supported by actual proof. See MPEP 716.01(c). Dr. Rajiv Singh does not present any experimental results. Rather, Dr. Rajiv Singh assertion constitute mere argument, and is of little probative value. To be of probative value, any objective evidence should be supported by actual proof. See MPEP 716.01(c).

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Referring to page 2, paragraph 8, of the subject declaration, Dr. Rajiv Singh states: “the Jaskie wet filtration techniques would be difficult, or impossible to scale up to commercial quantities...” This statement is in contradiction to, and consequently impeaches, the assertion of inoperability, above.

Referring to page 3, paragraph 9, of the subject declaration, Dr. Rajiv Singh states: “there [are] no filtration approaches publicly known that could create a collection of phosphorescent nanoparticles with a narrow size distribution...” The examiner respectfully disagrees. A precursory review of literature discloses that in 1938, during the Manhattan project, chromatography was used to separate lithium-6 from lithium-7. See *Instruments of Science and Historical Encyclopedia*, page 108. It is evidence that chromatograph is a well developed technology for the collection of particles that have an extremely narrow size distribution.

8. Referring to page 2, paragraph 5, it is noted that Dr. Rajiv Singh is under a consulting agreement with NanoGram Corporation, the assignee of the present application. In assessing the probative value of an expert opinion, the examiner must consider the interest of the expert in the outcome of the case, and the presence or absence of factual support for the expert's opinion. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986). In the instant case, Dr. Rajiv Singh can not be considered to be a disinterested expert, and provide no factual support for the expert's opinion.

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9. In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

Conclusion

10. This is a continuation of applicant's earlier Application No. 08/962,362. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Day whose telephone number is 703/305-4941. The examiner can normally be reached on Monday-Friday, from 8:00 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel, can be reached by phoning 703/305-4794. The Fax phone number is 703/308-7382.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is 703/308-0956.

April 21, 2000


MICHAEL DAY
PATENT EXAMINER
GROUP 2800